STATEMENT OF DR. MICHAEL D. MEYER, P.E.,
PROFESSOR OF CIVIL ENGINEERING, AND DIRECTOR,
GEORGIA TRANSPORTATION INSTITUTE,
GEORGIA INSTITUTE OF TECNOLOGY

BEFORE THE HIGHWAYS, TRANSIT, PIPELINES
SUBCOMMITTEE OF THE HOUSE OF
TRANSPORTATION AND INFRASTRUCTURE
COMMITTEE

MAY 12, 2006

MR. CHAIRMAN, my name is Michael D. Meyer. I am a professor of civil engineering at the Georgia Institute of Technology and Director of the Georgia Transportation Institute. From 1983 to 1988, I was Director of Transportation Planning and Development for the Commonwealth of Massachusetts, where I experienced firsthand the challenges of providing a transportation system that served freight movement effectively and efficiently. This year, I am chairman of the Executive Committee of the Transportation Research Board (TRB) and in the past year have chaired the TRB Freight Roundtable formed at the request of the U.S. Department of Transportation (U.S. DOT) to provide input on the nature and characteristics of a national freight policy.

My remarks will provide a personal perspective on the surface transportation challenges facing the movement of freight in this country today and even more so in the future. In the limited time I have available it is impossible to cover all aspects of these challenges that truly deserve attention in understanding freight movement issues and identifying potential solutions. For example, those in the governmental transportation sector have come to appreciate the implications of global supply chains and logistics on the travel demands placed on the nation's ports, railroads, highways, and inland waterways. The Minnesota Department of Transportation, for example, in its 2002 Multimodal Freight Flows Study concluded, "logistics trends are placing increasing strain on the State's roadway infrastructure, which already is under pressure from the State's continued strong economic growth."

Thus, it seems clear that a truly national strategy intending to provide greater efficiency in the transportation component of the supply chain should examine a broad range of opportunities, ranging from port capacity, limitations in available access to ports, bottlenecks along the line-haul routes (rail and road), pricing incentives and disincentives affecting shipping choices, and many other considerations. Today, I will focus my attention on the road network, and the tremendous challenges facing the nation in providing a road network that meets the freight needs of our nation.

You will hear today from my colleagues about the significant growth in truck flows expected over the next several decades on the U.S. highway network. National maps that show freight flows certainly suggest that we will see substantial increases in truck usage on our nation's highways. The Freight Analysis Framework developed by the Federal Highway Administration (FHWA) is an impressive tool that allows one to conduct all kinds of analyses relating to freight flows. However, I much prefer to investigate the issue of road performance and, in particular, future road performance, by examining the projections of future road use as made by the nation's metropolitan planning organizations (MPOs).

Federal law requires that every urbanized area over 50,000 population have a designated organization that serves as that region's MPO. One part of the MPO's responsibilities is to prepare a regional transportation plan that identifies a strategy for improving the performance of the transportation system. In most cases, the analysis that precedes the development of this strategy includes modeling the current and future use of the road network. Given that these models are closely tied to local circumstances and expected

trends in economic and demographic characteristics of the region, they provide a good indication of what is likely to occur in the future on the region's road network. In addition, I like to focus on metropolitan areas because they represent the greatest concentration of warehousing, distribution centers, intermodal yards, and convergence of major roads in the nation. Because of this concentration and the concomitant attraction of freight trips, metropolitan areas also have the distinction of often being major bottlenecks in the nation's movement of freight.

I have provided in Exhibit A figures and tables that indicate future road network performance in several of our nation's largest metropolitan areas. The key message that surfaces from this exhibit is that many of our most important metropolitan areas are likely to experience significant growth in congestion over the next 25 to 30 years. The most congested roads not only handle the traffic flows of people trying to travel in their respective regions, but they also handle large truck flows as well. With respect to freight movement, Miami and Seattle are major ports of entry for international trade, much of which travels inland by truck. Atlanta, Denver, and Dallas-Ft. Worth are major distribution centers that attract and generate large volumes of truck trips. If one were to show comparable figures for cities like Chicago, Los Angeles, and New York, you would most likely see even greater expected bottlenecks. And although the scale is very different, smaller and medium-sized cities are expected to experience their own increase in localized congestion over the next two decades.

Several key characteristics of a metropolitan road network and of the level of performance it provides merit special attention as it relates to road freight.

- In almost all cases, trucks share the road with passenger cars, light duty trucks, buses and motorcycles. Thus, in metropolitan areas in particular, as population and economic activity continues to grow, greater demand will be placed on the road network. Trucks will be mixed in with even greater volumes of traffic.

- Although many shippers and trucking firms, especially those moving freight long distances, try to schedule trips around the peak periods in metropolitan areas, the sheer volume of movement results in many truck trips occurring at the same time as all other trips. In addition, by examining travel data from U.S. cities, there is a strong indication that the peak periods are becoming longer in metropolitan areas and that the most significant growth in traffic volumes over the past decades has occurred in the off-peak travel periods.

- Truck trips tend to be concentrated along certain routes and in specific areas of a region. Trucks traveling through Atlanta, for example, are directed to the circumferential highway surrounding the downtown area and then on to the interstate highways leaving the region. Because of the economies of scale and agglomeration associated with freight distribution, most metropolitan areas have very distinct districts where large volumes of trucks are concentrated, thus placing substantial demand on the roads leading to and from these areas.

- Port cities, especially those serving as major ports of entry to the U.S., have experienced tremendous growth in freight trips, both on rail and via truck. The tremendous growth in international trade has created demands for both enhanced rail capacity and improved truck access. And many of the port facilities are located in highly urbanized areas, thus reinforcing the point made above of truck traffic and general traffic flow being mixed together in ever increasing numbers.

- Although analysis such as the FHWA's Freight Analysis Framework provide important insights at the national or state levels on what is happening to freight flows, they often cannot distinguish the localized impacts of what happens to freight when it reaches it destination, which in most cases, occurs in metropolitan areas. Thus, for example, one large truck could deliver its consignment to a warehouse in a suburb of a metropolitan area. However, the delivery of the individual goods that make up this consignment could utilize many different delivery vehicles using both the region's major freeway system, but more importantly local streets. It seems likely that the tremendous growth expected in major truck flows in the nation will result in tremendous growth in truck trips on local streets as well.

- The 25-year transportation investment plans for most U.S. metropolitan areas, required as part of federal transportation legislation are providing substantial amounts of investment in the region's transportation system--$54 billion in Atlanta, $61 billion in Chicago, $57 billion in Seattle and $45 billion in Dallas-Ft. Worth. This sounds like massive investment in the regional transportation systems of these metropolitan areas….and it is. However in many cases, such as in Atlanta, even after this level of investment, the performance of the major road network is expected to worsen. This is primarily due to the expected growth in population and corresponding travel, and the limited amount of funding that is available to improve the core highway network, which would be a very expensive undertaking. Even if funding were available, it would be difficult if not impossible to build expansive new infrastructure in urban areas that could be as disruptive as many of the urban freeways were in the late 1960s and early 1970s.

My testimony so far has painted a rather "constrained" vision of what might be possible for improving the movement and productivity of freight. In reality, the nation has no choice but to identify strategies and actions that provide the opportunity for the freight sector to be as efficient and globally competitive as possible. The issue becomes more complex because of the traditional roles of government and private firms in the freight sector, where market forces probably have more of an influence on decisions than government policies. However, it seems to me that the nation is at a major turning point with respect to its transportation system (and not just as it relates to freight movement). Some of our traditional funding sources (that is, the Highway Trust Fund) are coming under increasing strain. The growth in personal and freight travel is expected to climb dramatically over the next several decades, and yet we are struggling just to keep the performance of our future transportation systems no worse off than they are today, and in some cases we are lucky to keep the expected deterioration in network performance in single digit percentages. There is every expectation that our ports and air cargo facilities,

many of which are located in the middle of major metropolitan areas, will see significant increases in goods moving through their facilities, with much of this being moved via the road network.

Contrast this with other nations that are dramatically increasing their freight-handling capacity. I had the opportunity over the past three years of visiting Europe, Latin America, and Asia as part of the U.S. Department of Transportation's international scanning program. The focus of these particular scans was on how other nations were viewing freight movement and logistics and how they were preparing for expected future growth. The results of these scans were eye-opening. Nations who were major participants in global trade, or who had great ambitions to become major participants, were making major investments in infrastructure and were developing innovative financial and institutional arrangements that would position them nicely to take advantage of increasing trade opportunities (most impressively in China). Importantly for the U.S., almost all of these investments were focused on facilities and capabilities that would be needed to handle expected increases in trade with the U.S. and with the Asian market. The scans suggested to me that if we think we have problems with our road networks handling freight flows today, just wait 10 years!!

What do we as a nation need to do about the transportation challenges facing the freight and logistics sectors? Having been a participant in, and an observer of, transportation in the U.S. for almost 30 years, I realize there is not an easy, single dimension answer to this question. However, I offer the following observations and recommendations for the Subcommittee's consideration.

1. *Elevating freight mobility as an element of national transportation policy* is essential. Mr. Ron Widdows, Chief Executive of the American Presidents Line noted before a meeting of the U.S. DOT/TRB Freight Roundtable that I chair, "government leadership is needed… the problems will not be solved by the private sector alone…and addressing the problems that put the flow of commerce in the U.S. at risk in a more robust manner should be a priority." The *national freight policy framework* that has been developed by the U.S. DOT/TRB Freight Roundtable is a good "point of departure" for providing what Mr. Widdows suggests. The framework proposes the following vision for a national freight policy: "The United States freight transportation system will ensure the efficient, reliable, safe and secure movement of goods and support the nation's economic growth while improving environmental quality." The framework also recognizes that enhancing freight mobility requires progress on many fronts, ranging from institutional and regulatory changes to adding capacity in the multimodal transportation network where it makes economic sense. This framework should be utilized to identify the strategies and institutional responsibilities for adopting and implementing a national freight strategy.

2. *Removing freight bottlenecks* that have national implications for the movement of freight should be a primary focus of any national policy aimed at enhancing freight mobility. For purposes of my testimony today this primarily means alleviating congestion on the nation's road network at locations serving a significant number of truck trips. Of course, by reducing congestion at these locations one is also

improving travel for non-freight trips as well, thus obtaining multiple benefits from such a programmatic focus. Congress began such a program in SAFETEA-LU when it authorized a program for targeting intermodal freight transportation initiatives. The Freight Intermodal Distribution Pilot Program provides $30 million through 2009 for grants to facilitate intermodal freight transportation initiatives at the state and local levels to "relieve congestion and improve safety, and to provide capital funding to address infrastructure and freight distribution needs at inland ports and intermodal freight facilities." Although this is an important beginning, the program is woefully underfunded and, with projects pre-selected in the legislation, lacking in needed flexibility to choose the most beneficial projects.

3. Funding transportation projects is always an issue, especially for large projects. Although limited funding can be targeted at specific locations where investment will make a difference (for example, intersection improvements on access roads to ports or intermodal terminals), in most cases, the freight bottlenecks referred to above will be very expensive to address. Many occur on metropolitan freeway systems where, because of community and environmental constraints, it would be very difficult to add additional infrastructure. This suggests that bypass routes or more fully using the existing road right-of-way will likely be a focus of many improvement strategies

   Encouraging public/private investments in such improvements should be a major focus of transportation policy. The beneficiaries of such improvements can be identified and the calculus of estimating enhanced productivity benefits can clearly signal the private sector on whether the investment makes sense from the market perspective. However, let me provide a note of warning. Public/private partnerships are not a panacea to the nation's challenge in funding our transportation system. By definition, private investment will occur only where economic benefits will accrue to those investing. This means that large freight volumes need to be using a particular highway for such benefits to be perceived, and thus only the most traveled roads will likely be candidates for private investment. This leaves substantial investment need on the rest of the road network, which will require either additional funding from the usual sources (for example, motor fuel taxes) or use of other innovative funding sources (for example, metropolitan-level sales taxes dedicated to transportation purposes).

4. The Pilot Program referred to above focused on expanding the physical capacity of the transportation system to handle freight movement, that is, building more highway lanes or improving highway geometric designs at bottleneck points. Enhancing the capacity of roads to handle traffic can also occur by *implementing systems operations strategies* that promote more efficient traffic flow. Such strategies could include the use of intelligent transportation systems (ITS) technologies for promoting the most efficient routing through a road network, scheduling strategies to reduce the overlap of freight movement and other uses of the road network, network control strategies such as improved traffic signalization that reduces delay at intersections, etc. Federal incentives and leadership in this area has occurred in the past 10 to 15 years, and should continue.

5. Many years ago I along with others suggested that the appropriate focus for national transportation investment aimed at improving freight mobility was at the multi-state corridor level. *Focusing investment on freight mobility corridors* recognizes the fact that opportunities for improving freight movement do not exist just at ports or in metropolitan bottlenecks. SAFETEA-LU provided over $2.8 billion to fund transportation projects of national interest to improve transportation at international borders, ports of entry, and in trade corridors. Once again, this is a good foundation for a program that could have major national benefits, but one that deserves more resources.

6. I am convinced that we will see in the future more interest in *providing separate freight-only facilities* that segregate the movement of trucks from that of the general public travel. Of course, over long distances, the best example of this is the movement of intermodal freight on the nation's rail system, which by its very nature provides a separate right-of-way for freight movement. But with respect to trucks, many metropolitan areas are now examining the concept of truck-only facilities and in some cases truck-only toll facilities. I was part of such a study in the Atlanta region that investigated the feasibility of adding truck-only toll facilities to the region's road network. Given the large numbers of trucks using this road network, the study showed that a substantial number of trucks would use such facilities. In some cases, we estimated that as much as 87 minutes would be saved by a trucker using the truck lanes during the afternoon peak period. Importantly, and this is an important selling point to the general public, by removing trucks from the general purpose freeway lanes, congestion was reduced to the general public as well. As far as I could tell, providing truck lanes was as much a "win-win" situation as I have seen in the transportation field for a long time. The federal government can provide important leadership in fostering this concept and in providing incentives for public/private partnerships in developing such lanes where appropriate.

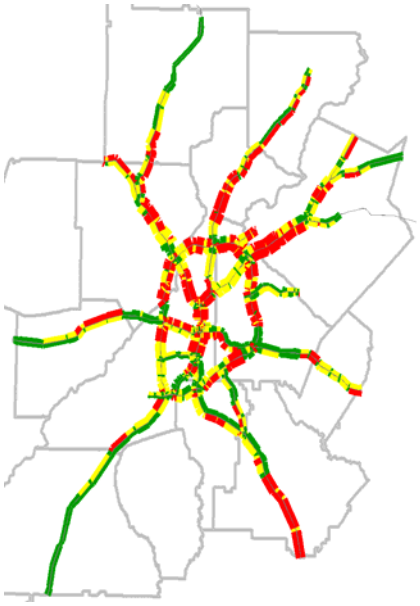
7. Most of my career has been spent either conducting research on or participating in statewide or metropolitan transportation planning. I am a firm believer that with respect to the public provision of transportation infrastructure and services the transportation planning process is an important part of the strategy for enabling any new focus or initiative to be engrained into the governmental approach toward improving the transportation system. Quite frankly, only recently and, in many cases, only in a few states and metropolitan areas has freight movement even been considered by transportation planners. The belief was that freight movement was an issue that belonged to the private sector. *Incorporating freight considerations more fully into the transportation planning process* can have important long-term benefits to the nation's transportation system. This could entail the identification of professional responsibility in a state DOT or metropolitan planning organization, enhancing planning capacity for dealing with freight issues (for which funding was made available in SAFETEA-LU), and of course providing programmatic funding for freight-oriented projects (which always gets the attention of the transportation planning community).

8. Finally, although I am not here today in my role as Chairman of the TRB Executive Committee, I have spent much of my professional career in the research arena. I strongly believe that research provides the foundation upon which the nation can anticipate future challenges and lay the knowledge groundwork so that our successors will have the tools needed to meet these challenges. *Continuing to support strategic research on freight transportation* is an essential component of a national and federal freight policy. Congress provided for the first time a national research program on freight transportation when SAFETEA-LU authorized $3.75 million per year for the years 2006-2009. This program, along with others such as the Strategic Highway Research Program and the Surface Transportation Environmental Cooperative Research Program, provide a much needed research foundation for dealing with many of the transportation issues facing the nation today and likely in the future. I suspect with respect to the freight research program we will find many more research project needs than there is funding. However, given the importance of freight to this nation, I cannot think of many other research initiatives in transportation that could potentially show the greatest return for the research dollar. Thus, it is important to support such research, and expand it when possible.

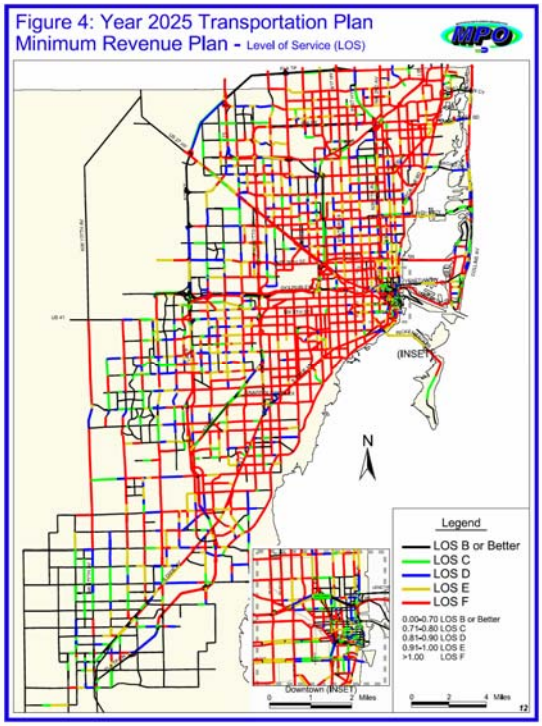
Mr Chairman, I appreciate the opportunity to speak before the Subcommittee today. The freight sector, a vitally important component of our nation's economy, relies heavily on the efficient and reliable movement of goods, much of which occurs on the nation's highway system. Based on the future projections of the use of this system, it seems likely that significant bottlenecks will seriously affect that ability of freight to move from one part of the country to another. This will be especially true in and around metropolitan areas. My testimony has outlined some of the initiatives that the country should take now to address these challenges. I have great faith in the resiliency of our transportation system to respond to capacity constraints, bottlenecks, and interruptions. However, it seems only prudent to do everything we can do today to limit the impact that such disruptions could have in the future. It is good planning to do so. It is good policy to do so. And it is common sense to do so.

Thank you for your time and consideration.

Exhibit A: Expected Congestion in Representative Cities



Expected Congestion on Atlanta Roadways, Afternoon Peak, 2030



Expected Congestion on Miami Roadways, Afternoon Peak, 2025

Expected Congestion on Seattle Roadways, Afternoon Peak, 2030

	1999	2025	% Change
Vehicle Miles Traveled	125 M	235 M	87%
Roadway Capacity	23.2 M	34.8 M	50%
Total Delay (Veh Hrs)	1.3 M	2.9 M	120%
% Roadways Congested	38%	54%	42%

Expected Congestion on Dallas-Ft. Worth Roadways, Afternoon Peak, 2025

Ave Weekday	2001	2025	% Change
Person hours of delay	308,987	790,819	156%
Lane-miles of severe congestion	1,600	3,000	88%
Lane-miles with 3+ hours severe congestion	455	870	91%

Expected Congestion on Denver Roadways, Afternoon Peak, 2025